

WEST[Help](#)[Logout](#)[Interrupt](#)[Main Menu](#)[Search Form](#)[Posting Counts](#)[Show 8 Numbers](#)[Edit 8 Numbers](#)[Preferences](#)[Cases](#)**Search Results -**

Terms	Documents
(plant\$3 or soy\$5 or glycine\$3) and L2	19

Database: US Patents Full-Text Database ▲
US Pre-Grant Publication Full-Text Database
JPO Abstracts Database
EPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins ▼

Search: L3 ▲
▼ Refine Search

Recall Text Clear

Search History

DATE: Friday, February 28, 2003 [Printable Copy](#) [Create Case](#)

Set Name Query
side by side

Hit Count Set Name
result set

DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=OR

<u>L3</u>	(plant\$3 or soy\$5 or glycine\$3) and L2	19	<u>L3</u>
<u>L2</u>	reductas\$3 and mthfr\$3	43	<u>L2</u>
<u>L1</u>	reductas\$3 same methylene?	5	<u>L1</u>

END OF SEARCH HISTORY

WEST[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 10 of 19 returned.** **1. Document ID: US 20030031681 A1**

L3: Entry 1 of 19

File: PGPB

Feb 13, 2003

PGPUB-DOCUMENT-NUMBER: 20030031681

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030031681 A1

TITLE: Combined growth factor-deleted and thymidine kinase-deleted vaccinia virus vector

PUBLICATION-DATE: February 13, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
McCart, J. Andrea	Toronto	PA	CA	
Bartlett, David L.	Pittsburgh	MD	US	
Moss, Bernard	Bethesda		US	

US-CL-CURRENT: 424/186.1; 435/235.1, 435/456

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMMC	Draw Desc
Image												

 **2. Document ID: US 20030023387 A1**

L3: Entry 2 of 19

File: PGPB

Jan 30, 2003

PGPUB-DOCUMENT-NUMBER: 20030023387

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030023387 A1

TITLE: Computer-assisted means for assessing lifestyle risk factors

PUBLICATION-DATE: January 30, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Gill-Garrison, Rosalynn D.	Isle of Wight		GB	
Martin, Christopher J.	Isle of Wight		GB	
Sanchez-Felix, Manuel V.	Isle of Wight		GB	

US-CL-CURRENT: 702/20; 705/3

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMMC	Draw Desc
Image												

 3. Document ID: US 20030023070 A1

L3: Entry 3 of 19

File: PGPB

Jan 30, 2003

PGPUB-DOCUMENT-NUMBER: 20030023070

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030023070 A1

TITLE: Attractin-like polynucleotides, polypeptides, and antibodies

PUBLICATION-DATE: January 30, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ni, Jian	Germantown	MD	US	
Ruben, Steven M.	Olney	MD	US	
Young, Paul E.	Gaithersburg	MD	US	

US-CL-CURRENT: 536/23.5; 435/320.1, 435/325, 435/69.1, 530/350

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw Desc
Image												

 4. Document ID: US 20020198211 A1

L3: Entry 4 of 19

File: PGPB

Dec 26, 2002

PGPUB-DOCUMENT-NUMBER: 20020198211

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020198211 A1

TITLE: cDNA for human methylenetetrahydrofolate reductase and uses thereof

PUBLICATION-DATE: December 26, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Rozen, Rima	Montreal West		CA	

US-CL-CURRENT: 514/251; 435/6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw Desc
Image												

 5. Document ID: US 20020192784 A1

L3: Entry 5 of 19

File: PGPB

Dec 19, 2002

PGPUB-DOCUMENT-NUMBER: 20020192784

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020192784 A1

TITLE: Biosynthesis of S-adenosylmethionine in a recombinant yeast strain

PUBLICATION-DATE: December 19, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Appling, Dean R.	Austin	TX	US	
Hanson, Andrew D.	Gainesville	FL	US	
Roje, Sanja	Gainesville	FL	US	
Raymond, Rhonda K.	Austin	TX	US	

US-CL-CURRENT: 435/191; 435/320.1, 435/419, 435/69.1, 536/23.2, 800/278

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC	Draw Desc
Image											

 6. Document ID: US 20020192310 A1

L3: Entry 6 of 19

File: PGPB

Dec 19, 2002

PGPUB-DOCUMENT-NUMBER: 20020192310

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020192310 A1

TITLE: Medical composition for managing hormone balance

PUBLICATION-DATE: December 19, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Bland, Jeffrey S.	Fox Island	WA	US	
Liska, DeAnn J.	Gig Harbor	WA	US	
Tripp, Matthew	Gig Harbor	WA	US	
Darland, Gary K.	Gig Harbor	WA	US	
Lukaczer, Daniel O.	Gig Harbor	WA	US	
Lerman, Robert	Gig Harbor	WA	US	

US-CL-CURRENT: 424/745; 424/755, 424/756, 424/757, 514/23, 514/27, 514/53, 514/733

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC	Draw Desc
Image											

 7. Document ID: US 20020155467 A1

L3: Entry 7 of 19

File: PGPB

Oct 24, 2002

PGPUB-DOCUMENT-NUMBER: 20020155467

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020155467 A1

TITLE: Method for the determination of at least one functional polymorphism in the nucleotide sequence of a preselected candidate gene and its applications

PUBLICATION-DATE: October 24, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Escary, Jean-Louis	Le Chesnay		FR	

US-CL-CURRENT: 435/6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	K00C	Draw Desc
Image											

☐ 8. Document ID: US 20020147140 A1

L3: Entry 8 of 19

File: PGPB

Oct 10, 2002

PGPUB-DOCUMENT-NUMBER: 20020147140
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020147140 A1

TITLE: Nucleic acids, proteins, and antibodies

PUBLICATION-DATE: October 10, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Rosen, Craig A.	Laytonsville	MD	US	
Ruben, Steven M.	Olney	MD	US	
Barash, Steven C.	Rockville	MD	US	

US-CL-CURRENT: 514/12; 435/183, 435/320.1, 435/325, 435/6, 435/69.1, 530/350, 536/23.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	K00C	Draw Desc
Image											

☐ 9. Document ID: US 20020102689 A1

L3: Entry 9 of 19

File: PGPB

Aug 1, 2002

PGPUB-DOCUMENT-NUMBER: 20020102689
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020102689 A1

TITLE: Tetrahydrofolate metabolism enzymes

PUBLICATION-DATE: August 1, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Falco, Saverio Carl	Wilmington	DE	US	
Famodu, Layo O.	Newark	DE	US	
Orozco, Emil M. JR.	West Grove	PA	US	
Rafalski, J. Antoni	Wilmington	DE	US	
Thorpe, Catherine J.	St. Albans		GB	

US-CL-CURRENT: 435/193; 435/320.1, 435/325, 435/69.1, 536/23.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Image									

KVMC Draw Desc

 10. Document ID: US 20020040490 A1

L3: Entry 10 of 19

File: PGPB

Apr 4, 2002

PGPUB-DOCUMENT-NUMBER: 20020040490

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020040490 A1

TITLE: Expressed sequences of arabidopsis thaliana

PUBLICATION-DATE: April 4, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Gorlach, Jorn	Durham	NC	US	
An, Yong-Qiang	San Diego	CA	US	
Hamilton, Carol M.	Apex	NC	US	
Price, Jennifer L.	Raleigh	NC	US	
Raines, Tracy M.	Durham	NC	US	
Yu, Yang	Martinsville	NJ	US	
Rameaka, Joshua G.	Durham	NC	US	
Page, Amy	Durham	NC	US	
Mathew, Abraham V.	Cary	NC	US	
Ledford, Brooke L.	Holly Springs	NC	US	
Woessner, Jeffrey P.	Hillsborough	NC	US	
Haas, William David	Durham	NC	US	
Garcia, Carlos A.	Carrboro	NC	US	
Kricker, Maja	Pittsboro	NC	US	
Slater, Ted	Apex	NC	US	
Davis, Keith R.	Durham	NC	US	
Allen, Keith	Cary	NC	US	
Hoffman, Neil	Chapel Hill	NC	US	
Hurban, Patrick	Raleigh	NC	US	

US-CL-CURRENT: 800/288; 435/4, 536/23.2, 536/23.6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Image									

KVMC Draw Desc

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Terms	Documents
(plant\$3 or soy\$5 or glycine\$3) and L2	19

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L3: Entry 11 of 19

File: PGPB

Apr 4, 2002

PGPUB-DOCUMENT-NUMBER: 20020039990
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020039990 A1

TITLE: Gene sequence variances in genes related to folate metabolism having utility in determining the treatment of disease

PUBLICATION-DATE: April 4, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Stanton, Vincent P. JR.	Belmont	MA	US	

US-CL-CURRENT: [514/1](#); [435/6](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Image									

[KIMC](#) [Draw Desc](#)☐ 12. Document ID: US 20010025030 A1

L3: Entry 12 of 19

File: PGPB

Sep 27, 2001

PGPUB-DOCUMENT-NUMBER: 20010025030
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20010025030 A1

TITLE: cDNA for human methylenetetrahydrofolate reductase and uses thereof

PUBLICATION-DATE: September 27, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Rozen, Rima	Montreal West		CA	
Sekhon, Jaspreet	Vancouver		CA	

US-CL-CURRENT: [514/44](#); [435/6](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Image									

[KIMC](#) [Draw Desc](#)☐ 13. Document ID: US 6451526 B1

L3: Entry 13 of 19

File: USPT

Sep 17, 2002

US-PAT-NO: 6451526

DOCUMENT-IDENTIFIER: US 6451526 B1

TITLE: Simplified mutation detection

DATE-ISSUED: September 17, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Song; Lu	Miami	FL		
O'Kane; Dennis J.	Rochester	MN		
Krajnik; Kelly L.	Rochester	MN		
Heit; John A.	Rochester	MN		

US-CL-CURRENT: 435/6; 435/91.1, 435/91.2, 536/22.1, 536/23.1, 536/24.3, 536/24.31, 536/24.32, 536/24.33

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC	Draw Desc
Image											

☐ 14. Document ID: US 6376210 B1

L3: Entry 14 of 19

File: USPT

Apr 23, 2002

US-PAT-NO: 6376210

DOCUMENT-IDENTIFIER: US 6376210 B1

TITLE: Methods and compositions for assaying analytes

DATE-ISSUED: April 23, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yuan; Chong-Sheng	San Diego	CA		

US-CL-CURRENT: 435/18; 435/195, 435/23, 435/252.3, 435/320.1, 435/455

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC	Draw Desc
Image											

☐ 15. Document ID: US 6218120 B1

L3: Entry 15 of 19

File: USPT

Apr 17, 2001

US-PAT-NO: 6218120

DOCUMENT-IDENTIFIER: US 6218120 B1

TITLE: Methods for detecting human methylene tetrahydrofolate reductase allelic variants

DATE-ISSUED: April 17, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Rozen; Rima	Montreal			CA
Goyette; Philippe	Montreal			CA

US-CL-CURRENT: 435/6; 435/91.2, 536/23.2, 536/23.5, 536/24.31, 536/24.33

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Image									

KWIC	Draw Desc
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☐ 16. Document ID: US 6210950 B1

L3: Entry 16 of 19

File: USPT

Apr 3, 2001

US-PAT-NO: 6210950

DOCUMENT-IDENTIFIER: US 6210950 B1

TITLE: Methods for diagnosing, preventing, and treating developmental disorders due to a combination of genetic and environmental factors

DATE-ISSUED: April 3, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Johnson; William G.	Short Hills	NJ		
Stenroos; Edward Scott	Harrison	NJ		

US-CL-CURRENT: 435/252.3; 435/183, 435/320.1, 536/23.1, 536/24.31, 536/24.33

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Image									

KWIC	Draw Desc
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☐ 17. Document ID: US 6074821 A

L3: Entry 17 of 19

File: USPT

Jun 13, 2000

US-PAT-NO: 6074821

DOCUMENT-IDENTIFIER: US 6074821 A

TITLE: CDNA for human methylenetetrahydrofolate reductase

DATE-ISSUED: June 13, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Rozen; Rima	Quebec			CA
Goyette; Philippe	Quebec			CA

US-CL-CURRENT: 435/6; 435/91.2, 536/23.5, 536/24.31, 536/24.33

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Image									

KWIC	Draw Desc
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 18. Document ID: WO 2079381 A2

L3: Entry 18 of 19

File: EPAB

Oct 10, 2002

PUB-NO: WO002079381A2

DOCUMENT-IDENTIFIER: WO 2079381 A2

TITLE: BIOSYNTHESIS OF S-ADENOSYLMETHIONINE IN A RECOMBINANT YEAST STRAIN

PUBN-DATE: October 10, 2002

INVENTOR-INFORMATION:

NAME

COUNTRY

APPLING, DEAN R

HANSON, ANDREW D

RAYMOND, RHONDA R

ROJE, SANJA

INT-CL (IPC): C12 N 0/

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Image									

KIMC	Draw Desc
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 19. Document ID: WO 200279381 A2 US 20020192784 A1

L3: Entry 19 of 19

File: DWPI

Oct 10, 2002

DERWENT-ACC-NO: 2003-040671

DERWENT-WEEK: 200303

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TITLE: Novel fused gene encoding methylene tetrahydrofolate reductase, useful for producing S-adenosylmethionine in plants, comprises N-terminal domain from yeast and C-terminal domain from plant

INVENTOR: APPLING, D R ; HANSON, A D ; RAYMOND, R K ; ROJE, S ; RAYMOND, R R

PRIORITY-DATA: 2001US-280333P (March 30, 2001), 2002US-0113852 (March 29, 2002)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 200279381 A2	October 10, 2002	E	052	C12N000/00
US 20020192784 A1	December 19, 2002		000	C12N009/06

INT-CL (IPC): C07 H 21/04; C12 N 0/00; C12 N 5/04; C12 N 5/06; C12 N 9/06; C12 P 21/02

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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(FILE 'HOME' ENTERED AT 17:45:51 ON 28 FEB 2003)

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI, BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, ...' ENTERED AT 17:46:04 ON 28 FEB 2003

SEA REDUCTAS? AND METHYLENETETRA?

57 FILE ADISCTI
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349 FILE GENBANK
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1117 FILE MEDLINE
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696 FILE PASCAL
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1906 FILE SCISEARCH
675 FILE TOXCENTER
140 FILE USPATFULL
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4 FILE IPA
24 FILE NLDB

L1 QUE REDUCTAS? AND METHYLENETETRA?

FILE 'SCISEARCH, BIOSIS, EMBASE, CAPLUS, MEDLINE, PASCAL, TOXCENTER, ESBIOBASE, BIOTECHNO, GENBANK, DGENE, CANCERLIT, USPATFULL, CABA, LIFESCI' ENTERED AT 17:50:25 ON 28 FEB 2003

L2 0 S REDUCTAS? SAME METHYLENETETRA?
L3 10663 S REDUCTAS? AND METHYLENETETRA?
L4 10320 S REDUCTAS? AND METHYLENETETRAHYDROFOLAT?
L5 12478 S REDUCTAS? AND FOLATE?

L6 0 S REDUCTAS? SAME MTHFR?
L7 6544 S REDUCTAS? AND MTHFR?
L8 138 S (PLANT? OR SOY? OR GLYCINE?) AND L7
L9 78 DUP REM L8 (60 DUPLICATES REMOVED)

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NEWS	3	Apr 09	BEILSTEIN: Reload and Implementation of a New Subject Area
NEWS	4	Apr 09	ZDB will be removed from STN
NEWS	5	Apr 19	US Patent Applications available in IFICDB, IFIPAT, and IFIUDB
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NEWS	7	Apr 22	BIOSIS Gene Names now available in TOXCENTER
NEWS	8	Apr 22	Federal Research in Progress (FEDRIP) now available
NEWS	9	Jun 03	New e-mail delivery for search results now available
NEWS	10	Jun 10	MEDLINE Reload
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NEWS	18	Aug 08	NTIS has been reloaded and enhanced
NEWS	19	Aug 19	Aquatic Toxicity Information Retrieval (AQUIRE) now available on STN
NEWS	20	Aug 19	IFIPAT, IFICDB, and IFIUDB have been reloaded
NEWS	21	Aug 19	The MEDLINE file segment of TOXCENTER has been reloaded
NEWS	22	Aug 26	Sequence searching in REGISTRY enhanced
NEWS	23	Sep 03	JAPIO has been reloaded and enhanced
NEWS	24	Sep 16	Experimental properties added to the REGISTRY file
NEWS	25	Sep 16	CA Section Thesaurus available in CAPLUS and CA
NEWS	26	Oct 01	CASREACT Enriched with Reactions from 1907 to 1985
NEWS	27	Oct 21	EVENTLINE has been reloaded
NEWS	28	Oct 24	BEILSTEIN adds new search fields
NEWS	29	Oct 24	Nutraceuticals International (NUTRACEUT) now available on STN
NEWS	30	Oct 25	MEDLINE SDI run of October 8, 2002
NEWS	31	Nov 18	DKILIT has been renamed APOLLIT
NEWS	32	Nov 25	More calculated properties added to REGISTRY
NEWS	33	Dec 02	TIBKAT will be removed from STN
NEWS	34	Dec 04	CSA files on STN
NEWS	35	Dec 17	PCTFULL now covers WP/PCT Applications from 1978 to date
NEWS	36	Dec 17	TOXCENTER enhanced with additional content
NEWS	37	Dec 17	Adis Clinical Trials Insight now available on STN
NEWS	38	Dec 30	ISMEC no longer available
NEWS	39	Jan 13	Indexing added to some pre-1967 records in CA/CAPLUS
NEWS	40	Jan 21	NUTRACEUT offering one free connect hour in February 2003
NEWS	41	Jan 21	PHARMAML offering one free connect hour in February 2003
NEWS	42	Jan 29	Simultaneous left and right truncation added to COMPENDEX, ENERGY, INSPEC
NEWS	43	Feb 13	CANCERLIT is no longer being updated
NEWS	44	Feb 24	METADEx enhancements
NEWS	45	Feb 24	PCTGEN now available on STN
NEWS	46	Feb 24	TEMA now available on STN
NEWS	47	Feb 26	NTIS now allows simultaneous left and right truncation
NEWS	48	Feb 26	PCTFULL now contains images

NEWS EXPRESS January 6 CURRENT WINDOWS VERSION IS V6.01a,
 CURRENT MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP),
 AND CURRENT DISCOVER FILE IS DATED 01 OCTOBER 2002
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=> index bioscience medicine

FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED

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ENTRY	SESSION
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FULL ESTIMATED COST

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68 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view search error messages that display as 0* with SET DETAIL OFF.

=> s reductas? and methylenetetra?

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41	FILE CONFSCI
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51	FILE DDFU
265	FILE DGENE
29	FILE DRUGB
72	FILE DRUGU

30 FILES SEARCHED...

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1394	FILE EMBASE
597	FILE ESBIODBASE
42	FILE FEDRIP
30	FILE FROSTI
5	FILE FSTA
349	FILE GENBANK
1	FILE HEALSAFE
6	FILE IFIPAT
61	FILE JICST-EPLUS
103	FILE LIFESCI
1117	FILE MEDLINE
1	FILE NUTRACEUT
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1	FILE PHIC
6	FILE PHIN
18	FILE PROMT
1906	FILE SCISEARCH
675	FILE TOXCENTER
140	FILE USPATFULL
1	FILE USPAT2

63 FILES SEARCHED...

14	FILE WPIDS
14	FILE WPINDEX
4	FILE IPA
24	FILE NLDB

48 FILES HAVE ONE OR MORE ANSWERS, 68 FILES SEARCHED IN STNINDEX

L1 QUE REDUCTAS? AND METHYLENETETRA?

=> d rank

F1	1906	SCISEARCH
F2	1544	BIOSIS
F3	1394	EMBASE
F4	1160	CAPLUS
F5	1117	MEDLINE
F6	696	PASCAL
F7	675	TOXCENTER
F8	597	ESBIODBASE
F9	417	BIOTECHNO
F10	349	GENBANK
F11	265	DGENE
F12	168	CANCERLIT
F13	140	USPATFULL
F14	132	CABA
F15	103	LIFESCI
F16	72	DRUGU
F17	61	JICST-EPLUS
F18	57	ADISCTI
F19	51	DDFU
F20	42	FEDRIP
F21	41	CONFSCI
F22	36	AGRICOLA
F23	30	FROSTI
F24	29	DDFB
F25	29	DRUGB
F26	29	EMBAL
F27	24	NLDB
F28	18	PROMT
F29	16	BIOTECHABS
F30	16	BIOTECHDS
F31	14	WPIDS
F32	14	WPINDEX

F33	9	CIN
F34	6	ANABSTR
F35	6	IFIPAT
F36	6	PHIN
F37	5	ADISNEWS
F38	5	FSTA
F39	4	IPA
F40	3	BIOBUSINESS
F41	3	BIOCOMMERCE
F42	3	CEABA-VTB
F43	2	ADISINSIGHT
F44	1	AQUASCI
F45	1	HEALSAFE
F46	1	NUTRACEUT
F47	1	PHIC
F48	1	USPAT2

=> file f1-f15

COST IN U.S. DOLLARS

SINCE FILE

ENTRY

TOTAL

SESSION

FULL ESTIMATED COST

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=> s reductas? same methylenetetra?

L2 0 REDUCTAS? SAME METHYLENETETRA?

=> s reductas? and methylenetetra?

L3 10663 REDUCTAS? AND METHYLENETETRA?

=> s reductas? and methylenetetrahydrofolat?

L4 10320 REDUCTAS? AND METHYLENETETRAHYDROFOLAT?

=> s reductas? and folate?

L5 12478 REDUCTAS? AND FOLATE?

=> d ti l5

L5 ANSWER 1 OF 12478 SCISEARCH COPYRIGHT 2003 ISI (R)

TI Genotype and haplotype distributions of MTHFR 677C > T and 1298A > C
single nucleotide polymorphisms: a meta-analysis

=> d ti l4

L4 ANSWER 1 OF 10320 SCISEARCH COPYRIGHT 2003 ISI (R)

TI Stroke in young patients with hyperhomocysteinemia due to cystathionine
beta-synthase deficiency

=> s reductas? same mthfr?

L6 0 REDUCTAS? SAME MTHFR?

=> s reductas? and mthfr?

L7 6544 REDUCTAS? AND MTHFR?

=> s (plant? or soy? or glycine?) and l7

9 FILES SEARCHED...

L8 138 (PLANT? OR SOY? OR GLYCINE?) AND L7

=> dup rem l8

DUPLICATE IS NOT AVAILABLE IN 'GENBANK, DGENE'.

ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE

PROCESSING COMPLETED FOR L8

L9 78 DUP REM L8 (60 DUPLICATES REMOVED)

=> d ti l9 1-78

L9 ANSWER 1 OF 78 USPATFULL

TI Combined growth factor-deleted and thymidine kinase-deleted vaccinia
virus vector

L9 ANSWER 2 OF 78 USPATFULL

TI Computer-assisted means for assessing lifestyle risk factors

L9 ANSWER 3 OF 78 USPATFULL

TI Attractin-like polynucleotides, polypeptides, and antibodies

L9 ANSWER 4 OF 78 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 1

TI Vitamin B12 decreases, but does not normalize, homocysteine and
methylmalonic acid in end-stage renal disease: A link with **glycine**
metabolism and possible explanation of hyperhomocysteinemia in end-stage
renal disease

L9 ANSWER 5 OF 78 USPATFULL
 TI cDNA for human methylenetetrahydrofolate **reductase** and uses thereof

L9 ANSWER 6 OF 78 USPATFULL
 TI Biosynthesis of S-adenosylmethionine in a recombinant yeast strain

L9 ANSWER 7 OF 78 USPATFULL
 TI Medical composition for managing hormone balance

L9 ANSWER 8 OF 78 USPATFULL
 TI Method for the determination of at least one functional polymorphism in the nucleotide sequence of a preselected candidate gene and its applications

L9 ANSWER 9 OF 78 USPATFULL
 TI Nucleic acids, proteins, and antibodies

L9 ANSWER 10 OF 78 USPATFULL
 TI Tetrahydrofolate metabolism enzymes

L9 ANSWER 11 OF 78 USPATFULL
 TI Expressed sequences of arabidopsis thaliana

L9 ANSWER 12 OF 78 USPATFULL
 TI Gene sequence variances in genes related to folate metabolism having utility in determining the treatment of disease

L9 ANSWER 13 OF 78 USPATFULL
 TI Methods and compositions for assaying analytes

L9 ANSWER 14 OF 78 SCISEARCH COPYRIGHT 2003 ISI (R) DUPLICATE 2
 TI Metabolic engineering in yeast demonstrates that S-adenosylmethionine controls flux through the methylenetetrahydrofolate **reductase** reaction in vivo

L9 ANSWER 15 OF 78 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.DUPLICATE 3
 TI Polymorphisms in the thymidylate synthase and serine hydroxymethyltransferase genes and risk of adult acute lymphocytic leukemia.

L9 ANSWER 16 OF 78 SCISEARCH COPYRIGHT 2003 ISI (R) DUPLICATE 4
 TI Homocysteine and folate status in methotrexate-treated patients with rheumatoid arthritis

L9 ANSWER 17 OF 78 MEDLINE
 TI Spina bifida, folate metabolism, and dietary folate intake in a Northern Canadian aboriginal population.

L9 ANSWER 18 OF 78 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.DUPLICATE 5
 TI Thymidylate synthase: A novel genetic determinant of plasma homocysteine and folate levels.

L9 ANSWER 19 OF 78 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
 TI Smoking behavior and the C677T allele of the methylenetetrahydrofolate **reductase** (MTHFR) gene.

L9 ANSWER 20 OF 78 CAPLUS COPYRIGHT 2003 ACS
 TI Detection of variations in the DNA methylation profile of genes in the determining the risk of disease

L9 ANSWER 21 OF 78 USPATFULL
 TI cDNA for human methylenetetrahydrofolate **reductase** and uses thereof

L9 ANSWER 22 OF 78 USPATFULL
 TI Methods for detecting human methylene tetrahydrofolate **reductase** allelic variants

L9 ANSWER 23 OF 78 USPATFULL
 TI Methods for diagnosing, preventing, and treating developmental disorders due to a combination of genetic and environmental factors

L9 ANSWER 24 OF 78 SCISEARCH COPYRIGHT 2003 ISI (R) DUPLICATE 6
 TI Genetic susceptibility to preeclampsia: Roles of cytosine-to-thymine substitution at nucleotide 677 of the gene for methylenetetrahydrofolate **reductase**, 68-base pair insertion at nucleotide 844 of the gene for cystathionine beta-synthase, and factor V Leiden mutation

L9 ANSWER 25 OF 78 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
 TI Regulation of homocysteine remethylation and other cycles of one-carbon metabolism.

L9 ANSWER 26 OF 78 SCISEARCH COPYRIGHT 2003 ISI (R) DUPLICATE 7
 TI Ontogeny of hepatic enzymes involved in serine- and folate-dependent one-carbon metabolism in rabbits

L9 ANSWER 27 OF 78 Elsevier BIOBASE COPYRIGHT 2003 Elsevier Science B.V.
 TI Ontogeny of hepatic enzymes involved in serine- and folate-dependent one-carbon metabolism in rabbits

L9 ANSWER 28 OF 78 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
 TI Lower thoracic spinal cord ischemia in a boy with resistance to C activated protein: A clinical and genetic study.

L9 ANSWER 29 OF 78 CABA COPYRIGHT 2003 CABI
 TI Genetic, dietary, and other lifestyle determinants of plasma homocysteine concentrations in middle-aged and older Chinese men and women in Singapore.

L9 ANSWER 30 OF 78 CAPLUS COPYRIGHT 2003 ACS
 TI Toward elucidating the global gene expression patterns of developing Arabidopsis: parallel analysis of 8 300 genes by a high-density oligonucleotide probe array

L9 ANSWER 31 OF 78 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.
 TI Homozygous V/V (677C to T) and D/D (2756G to A) variants in the methylenetetrahydrofolate and methionine synthase genes in a case of hyperhomocysteinemia with stroke at young age.

L9 ANSWER 32 OF 78 PASCAL COPYRIGHT 2003 INIST-CNRS. ALL RIGHTS RESERVED.
 TIEN Ontogeny of hepatic enzymes involved in serine- and folate-dependent one-carbon metabolism in rabbits

L9 ANSWER 33 OF 78 USPATFULL
 TI CDNA for human methylenetetrahydrofolate **reductase**

L9 ANSWER 34 OF 78 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 8
 TI Effect of heterozygosity for the methionine synthase 2756 A.fwdarw.G mutation on the risk for recurrent cardiovascular events

L9 ANSWER 35 OF 78 SCISEARCH COPYRIGHT 2003 ISI (R) DUPLICATE 9
 TI Genetic modulation of homocysteinemia

L9 ANSWER 36 OF 78 MEDLINE DUPLICATE 10
 TI Diet and prevention of colorectal cancer.

L9 ANSWER 37 OF 78 CABA COPYRIGHT 2003 CABI
 TI Identification of two cDNAs encoding methylenetetrahydrofolate

reductase.

- L9 ANSWER 38 OF 78 SCISEARCH COPYRIGHT 2003 ISI (R) DUPLICATE 11
TI Isolation, characterization, and functional expression of cDNAs encoding NADH-dependent methylenetetrahydrofolate **reductase** from higher plants
- L9 ANSWER 39 OF 78 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI Functional characterization of human methylenetetrahydrofolate **reductase** in *Saccharomyces cerevisiae*.
- L9 ANSWER 40 OF 78 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI *Saccharomyces cerevisiae* expresses two genes encoding isozymes of methylenetetrahydrofolate **reductase**.
- L9 ANSWER 41 OF 78 SCISEARCH COPYRIGHT 2003 ISI (R) DUPLICATE 12
TI Polymorphism of the methionine synthase gene - Association with homocysteine metabolism and late-onset vascular diseases in the Japanese population
- L9 ANSWER 42 OF 78 SCISEARCH COPYRIGHT 2003 ISI (R) DUPLICATE 13
TI Methionine synthase D919G polymorphism is a significant but modest determinant of circulating homocysteine concentrations
- L9 ANSWER 43 OF 78 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.
TI Altered folate and vitamin B12 metabolism in families with spina bifida offspring.
- L9 ANSWER 44 OF 78 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI Human methylenetetrahydrofolate **reductase**: Isolation of cDNA, mapping and mutation identification.
- L9 ANSWER 45 OF 78 GENBANK.RTM. COPYRIGHT 2003
TITLE (TI): Public **Soybean** EST Project
- L9 ANSWER 46 OF 78 GENBANK.RTM. COPYRIGHT 2003
TITLE (TI): Arabidopsis Open Reading Frame (ORF) Clones
TITLE (TI): Direct Submission
- L9 ANSWER 47 OF 78 GENBANK.RTM. COPYRIGHT 2003
TITLE (TI): Genomic sequence for *Oryza sativa*, Nipponbare strain, clone OJ1208D02, from chromosome 10, complete sequence
TITLE (TI): Direct Submission
TITLE (TI): Direct Submission
- L9 ANSWER 48 OF 78 GENBANK.RTM. COPYRIGHT 2003
TITLE (TI): Arabidopsis Full Length cDNA Clones
TITLE (TI): Direct Submission
- L9 ANSWER 49 OF 78 GENBANK.RTM. COPYRIGHT 2003
TITLE (TI): Public **Soybean** EST Project
- L9 ANSWER 50 OF 78 GENBANK.RTM. COPYRIGHT 2003
TITLE (TI): Nucleotide sequence and predicted functions of the entire *Sinorhizobium meliloti* pSymA megaplasmid
TITLE (TI): Direct Submission
- L9 ANSWER 51 OF 78 GENBANK.RTM. COPYRIGHT 2003

TITLE (TI): Public **Soybean** EST Project

L9 ANSWER 52 OF 78 GENBANK.RTM. COPYRIGHT 2003

TITLE (TI): Direct Submission

L9 ANSWER 53 OF 78 GENBANK.RTM. COPYRIGHT 2003

TITLE (TI): Isolation, characterization, and functional expression of cDNAs encoding NADH-dependent methylenetetrahydrofolate **reductase** from higher **plants**

TITLE (TI): Direct Submission

L9 ANSWER 54 OF 78 GENBANK.RTM. COPYRIGHT 2003

TITLE (TI): Isolation, characterization, and functional expression of cDNAs encoding NADH-dependent methylenetetrahydrofolate **reductase** from higher **plants**

TITLE (TI): Direct Submission

L9 ANSWER 55 OF 78 GENBANK.RTM. COPYRIGHT 2003

TITLE (TI): Folate metabolism in higher **plants**: cloning of a cDNA for 5,10-methylenetetrahydrofolate **reductase** in *Arabidopsis thaliana*

TITLE (TI): Direct Submission

L9 ANSWER 56 OF 78 GENBANK.RTM. COPYRIGHT 2003

TITLE (TI): Isolation, characterization, and functional expression of cDNAs encoding NADH-dependent methylenetetrahydrofolate **reductase** from higher **plants**

TITLE (TI): Direct Submission

L9 ANSWER 57 OF 78 GENBANK.RTM. COPYRIGHT 2003

TITLE (TI): Direct Submission

L9 ANSWER 58 OF 78 GENBANK.RTM. COPYRIGHT 2003

TITLE (TI): Direct Submission

L9 ANSWER 59 OF 78 DGENE (C) 2003 THOMSON DERWENT

TI Novel fused gene encoding methylene tetrahydrofolate **reductase**, useful for producing S-adenosylmethionine in **plants**, comprises N-terminal domain from yeast and C-terminal domain from **plant**

-

L9 ANSWER 60 OF 78 DGENE (C) 2003 THOMSON DERWENT

TI Novel fused gene encoding methylene tetrahydrofolate **reductase**, useful for producing S-adenosylmethionine in **plants**, comprises N-terminal domain from yeast and C-terminal domain from **plant**

-

L9 ANSWER 61 OF 78 DGENE (C) 2003 THOMSON DERWENT

TI Novel tetrahydrofolate metabolism enzyme used to alter the level of tetrahydrofolate metabolism in **plants** and seeds -

L9 ANSWER 62 OF 78 DGENE (C) 2003 THOMSON DERWENT

TI Novel tetrahydrofolate metabolism enzyme used to alter the level of tetrahydrofolate metabolism in **plants** and seeds -

L9 ANSWER 63 OF 78 DGENE (C) 2003 THOMSON DERWENT
 TI Novel tetrahydrofolate metabolism enzyme used to alter the level of tetrahydrofolate metabolism in **plants** and seeds -

L9 ANSWER 64 OF 78 DGENE (C) 2003 THOMSON DERWENT
 TI Novel fused gene encoding methylene tetrahydrofolate **reductase**, useful for producing S-adenosylmethionine in **plants**, comprises N-terminal domain from yeast and C-terminal domain from **plant** -

L9 ANSWER 65 OF 78 DGENE (C) 2003 THOMSON DERWENT
 TI Novel fused gene encoding methylene tetrahydrofolate **reductase**, useful for producing S-adenosylmethionine in **plants**, comprises N-terminal domain from yeast and C-terminal domain from **plant** -

L9 ANSWER 66 OF 78 DGENE (C) 2003 THOMSON DERWENT
 TI Novel fused gene encoding methylene tetrahydrofolate **reductase**, useful for producing S-adenosylmethionine in **plants**, comprises N-terminal domain from yeast and C-terminal domain from **plant** -

L9 ANSWER 67 OF 78 DGENE (C) 2003 THOMSON DERWENT
 TI Novel fused gene encoding methylene tetrahydrofolate **reductase**, useful for producing S-adenosylmethionine in **plants**, comprises N-terminal domain from yeast and C-terminal domain from **plant** -

L9 ANSWER 68 OF 78 DGENE (C) 2003 THOMSON DERWENT
 TI Novel fused gene encoding methylene tetrahydrofolate **reductase**, useful for producing S-adenosylmethionine in **plants**, comprises N-terminal domain from yeast and C-terminal domain from **plant** -

L9 ANSWER 69 OF 78 DGENE (C) 2003 THOMSON DERWENT
 TI Novel fused gene encoding methylene tetrahydrofolate **reductase**, useful for producing S-adenosylmethionine in **plants**, comprises N-terminal domain from yeast and C-terminal domain from **plant** -

L9 ANSWER 70 OF 78 DGENE (C) 2003 THOMSON DERWENT
 TI Novel fused gene encoding methylene tetrahydrofolate **reductase**, useful for producing S-adenosylmethionine in **plants**, comprises N-terminal domain from yeast and C-terminal domain from **plant** -

L9 ANSWER 71 OF 78 DGENE (C) 2003 THOMSON DERWENT
 TI Novel fused gene encoding methylene tetrahydrofolate **reductase**, useful for producing S-adenosylmethionine in **plants**, comprises N-terminal domain from yeast and C-terminal domain from **plant** -

L9 ANSWER 72 OF 78 DGENE (C) 2003 THOMSON DERWENT
 TI Novel fused gene encoding methylene tetrahydrofolate **reductase**, useful for producing S-adenosylmethionine in **plants**, comprises N-terminal domain from yeast and C-terminal domain from **plant** -

L9 ANSWER 73 OF 78 DGENE (C) 2003 THOMSON DERWENT
 TI Novel fused gene encoding methylene tetrahydrofolate **reductase**, useful for producing S-adenosylmethionine in **plants**, comprises N-terminal domain from yeast and C-terminal domain from **plant** -

L9 ANSWER 74 OF 78 DGENE (C) 2003 THOMSON DERWENT

TI Novel fused gene encoding methylene tetrahydrofolate **reductase**, useful for producing S-adenosylmethionine in **plants**, comprises N-terminal domain from yeast and C-terminal domain from **plant**

-

L9 ANSWER 75 OF 78 DGENE (C) 2003 THOMSON DERWENT

TI Novel tetrahydrofolate metabolism enzyme used to alter the level of tetrahydrofolate metabolism in **plants** and seeds -

L9 ANSWER 76 OF 78 DGENE (C) 2003 THOMSON DERWENT

TI Novel tetrahydrofolate metabolism enzyme used to alter the level of tetrahydrofolate metabolism in **plants** and seeds -

L9 ANSWER 77 OF 78 DGENE (C) 2003 THOMSON DERWENT

TI Novel tetrahydrofolate metabolism enzyme used to alter the level of tetrahydrofolate metabolism in **plants** and seeds -

L9 ANSWER 78 OF 78 DGENE (C) 2003 THOMSON DERWENT

TI Novel tetrahydrofolate metabolism enzyme used to alter the level of tetrahydrofolate metabolism in **plants** and seeds -

=> d 19 ibib abs 72 78 38 39

L9 ANSWER 72 OF 78 DGENE (C) 2003 THOMSON DERWENT

ACCESSION NUMBER: ABV74171 DNA DGENE

TITLE: Novel fused gene encoding methylene tetrahydrofolate **reductase**, useful for producing S-adenosylmethionine in **plants**, comprises N-terminal domain from yeast and C-terminal domain from **plant** -

INVENTOR: Appling D R; Hanson A D; Raymond R R; Roje S

PATENT ASSIGNEE: (TEXA)UNIV TEXAS.

(UYFL) UNIV FLORIDA.

PATENT INFO: WO 2002079381 A2 20021010 52p

APPLICATION INFO: WO 2002-US10064 20020329

PRIORITY INFO: US 2001-280333P 20010330

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 2003-040671 [03]

AN ABV74171 DNA DGENE

AB The present sequence encodes a 14-amino acid sequence comprising the fusion junction of a novel fusion protein of the invention comprising the N-terminal catalytic domain (see ABP55056) of *Saccharomyces cerevisiae* methylene tetrahydrofolate **reductase** (**MTHFR**) and the C-terminal regulatory domain (see ABP55057) of *Arabidopsis thaliana* AtMTHFR-1. The DNA sequence codes for 7 amino acids from each protein fragment that makes up the fusion protein. The fusion protein is an S-adenosylmethionine (AdoMet) insensitive enzyme, which can use both NADPH and NADH, and which has the novel combined catalytic and regulatory properties of its parents. Expression of the fusion protein in a host cell capable of methionine biosynthesis results in the overproduction of AdoMet, without the need to supply the host with a source of untransformed methionine. In an example, AdoMet production in yeast cells expressing chimeric **MTHFR** was 75 to 254 times that of wild-type cells. The fusion protein can also be expressed in **plant** cells. AdoMet is a metabolic agent used in the treatment of depression, osteoarthritis, fibromyalgia, liver cirrhosis and migraine.

L9 ANSWER 78 OF 78 DGENE (C) 2003 THOMSON DERWENT

ACCESSION NUMBER: AAZ50059 cDNA DGENE

TITLE: Novel tetrahydrofolate metabolism enzyme used to alter the level of tetrahydrofolate metabolism in **plants** and seeds -

INVENTOR: Falco S C; Fomodu L O

PATENT ASSIGNEE: (DUPO)DU PONT DE NEMOURS & CO E I.

PATENT INFO: WO 2000004163 A1 20000127
APPLICATION INFO: WO 1999-US15916 19990714
PRIORITY INFO: US 1998-92869 19980715
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2000-182429 [16]

37p

AN AAZ50059 cDNA DGENE

AB The present sequence is a cDNA clone ccol.pk0049.d4 encoding 5,10-methylenetetrahydrofolate **reductase** (**MTHFR**). The clone was isolated from a ccol cDNA library which was prepared using corn cob of 67 days old **plants** grown in green house. **MTHFR** plays a role in the synthesis of methionine. The present sequence is used in the construction of a chimeric gene to alter the level of tetrahydrofolate metabolism enzymes in **plants**. The enzyme may provide target to facilitate design and/or identification of inhibitors that may be useful as herbicides. The polynucleotide is also useful as a source of probes for genetically and physically mapping the genes and as markers for traits linked to the genes.

L9 ANSWER 38 OF 78 SCISEARCH COPYRIGHT 2003 ISI (R) DUPLICATE 11

ACCESSION NUMBER: 2000:628 SCISEARCH

THE GENUINE ARTICLE: 266AV

TITLE: Isolation, characterization, and functional expression of cDNAs encoding NADH-dependent methylenetetrahydrofolate **reductase** from higher **plants**

AUTHOR: Roje S; Wang H; McNeil S D; Raymond R K; Appling D R; ShacharHill Y; Bohnert H J; Hanson A D (Reprint)

CORPORATE SOURCE: UNIV FLORIDA, DEPT HORT SCI, GAINESVILLE, FL 32611 (Reprint); UNIV FLORIDA, DEPT HORT SCI, GAINESVILLE, FL 32611; UNIV ARIZONA, DEPT BIOCHEM, TUCSON, AZ 85721; UNIV TEXAS, DEPT CHEM & BIOCHEM, AUSTIN, TX 78712; NEW MEXICO STATE UNIV, DEPT CHEM & BIOCHEM, LAS CRUCES, NM 88003

COUNTRY OF AUTHOR: USA

SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (17 DEC 1999) Vol. 274, No. 51, pp. 36089-36096.
Publisher: AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC, 9650 ROCKVILLE PIKE, BETHESDA, MD 20814.
ISSN: 0021-9258.

DOCUMENT TYPE: Article; Journal

FILE SEGMENT: LIFE

LANGUAGE: English

REFERENCE COUNT: 41

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Methylenetetrahydrofolate **reductase** (**MTHFR**) is the least understood enzyme of folate-mediated one-carbon metabolism in **plants**. Genomics-based approaches were used to identify one maize and two Arabidopsis cDNAs specifying proteins homologous to **MTHFRs** from other organisms. These cDNAs encode functional **MTHFRs**, as evidenced by their ability to complement a yeast met12 met13 mutant, and by the presence of **MTHFR** activity in extracts of complemented yeast cells. Deduced sequence analysis shows that the **plant MTHFR** polypeptides are of similar size (66 kDa) and domain structure to other eukaryotic **MTHFRs**, and lack obvious targeting sequences. Southern analyses and genomic evidence indicate that Arabidopsis has two **MTHFR** genes and that maize has at least two. A carboxyl terminal polyhistidine tag was added to one Arabidopsis **MTHFR**, and used to purify the enzyme 640-fold to apparent homogeneity. Size exclusion chromatography and denaturing gel electrophoresis of the recombinant enzyme indicate that it exists as a dimer of approximate to 66-kDa subunits. Unlike mammalian **MTHFR**, the **plant** enzymes strongly prefer NADH to NADPH, and are not inhibited by S-adenosylmethionine. An NADH-dependent **MTHFR** reaction could be reversible in **plant** cytosol, where the NADH/NAD ratio is 10(-3). Consistent with this, leaf tissues metabolized [methyl-C-14]methyltetrahydrofolate to serine, sugars, and starch. A

reversible **MTHFR** reaction would obviate the need for inhibition by S-adenosylmethionine to prevent excessive conversion of methylene- to methyltetrahydrofolate.

L9 ANSWER 39 OF 78 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 2000:26854 BIOSIS

DOCUMENT NUMBER: PREV200000026854

TITLE: Functional characterization of human methylenetetrahydrofolate **reductase** in *Saccharomyces cerevisiae*.

AUTHOR(S): Shan, Xiaoyin; Wang, Liqun; Hoffmaster, Roselle; Kruger, Warren D. (1)

CORPORATE SOURCE: (1) Division of Population Science, Fox Chase Cancer Center, 7701 Burholme Ave., Philadelphia, PA, 19111 USA

SOURCE: Journal of Biological Chemistry, (Nov. 12, 1999) Vol. 274, No. 46, pp. 32613-32618.
ISSN: 0021-9258.

DOCUMENT TYPE: Article

LANGUAGE: English

SUMMARY LANGUAGE: English

AB Human methylenetetrahydrofolate **reductase** (**MTHFR**, EC 1.5.1.20) catalyzes the reduction of 5,10-methylenetetrahydrofolate to 5-methyltetrahydrofolate. 5-Methyltetrahydrofolate is a major methyl donor in the remethylation of homocysteine to methionine. Impaired **MTHFR** can cause high levels of homocysteine in plasma, which is an independent risk factor for vascular disease and neural tube defects. We have functionally characterized wild-type and several mutant alleles of human **MTHFR** in yeast, *Saccharomyces cerevisiae*. We have shown that yeast MET11 is a functional homologue of human **MTHFR**. Expression of the human **MTHFR** cDNA in a yeast strain deleted for MET11 can restore the strain's **MTHFR** activity in vitro and complement its methionine auxotrophic phenotype in vivo. To understand the domain structure of human **MTHFR**, we have truncated the C terminus (50%) of the protein and demonstrated that expressing an N-terminal human **MTHFR** in met11- yeast cells rescues the growth phenotype, indicating that this region contains the catalytic domain of the enzyme. However, the truncation leads to the reduced protein levels, suggesting that the C terminus may be important for protein stabilization. We have also functionally characterized four missense mutations identified from patients with severe **MTHFR** deficiency and two common missense polymorphisms found at high frequency in the general population. Three of the four missense mutations are unable to complement the auxotrophic phenotype of met11- yeast cells and show less than 7% enzyme activity of the wild type in vitro. Both of the two common polymorphisms are able to complement the growth phenotype, although one exhibited thermolabile enzyme activity in vitro. These results shall be useful for the functional characterization of **MTHFR** mutations and analysis structure/function relationship of the enzyme.

=> d his

(FILE 'HOME' ENTERED AT 17:45:51 ON 28 FEB 2003)

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI, BIOBUSINESS, BIOCUMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, ...' ENTERED AT 17:46:04 ON 28 FEB 2003

SEA REDUCTAS? AND METHYLENETETRA?

57 FILE ADISCTI
2 FILE ADISINSIGHT
5 FILE ADISNEWS
36 FILE AGRICOLA

6 FILE ANABSTR
 1 FILE AQUASCI
 3 FILE BIOBUSINESS
 3 FILE BIOCOMMERCE
 1544 FILE BIOSIS
 16 FILE BIOTECHABS
 16 FILE BIOTECHDS
 417 FILE BIOTECHNO
 132 FILE CABA
 168 FILE CANCERLIT
 1160 FILE CAPLUS
 3 FILE CEABA-VTB
 9 FILE CIN
 41 FILE CONFSCI
 29 FILE DDFB
 51 FILE DDFU
 265 FILE DGENE
 29 FILE DRUGB
 72 FILE DRUGU
 29 FILE EMBAL
 1394 FILE EMBASE
 597 FILE ESBIODBASE
 42 FILE FEDRIP
 30 FILE FROSTI
 5 FILE FSTA
 349 FILE GENBANK
 1 FILE HEALSAFE
 6 FILE IFIPAT
 61 FILE JICST-EPLUS
 103 FILE LIFESCI
 1117 FILE MEDLINE
 1 FILE NUTRACEUT
 696 FILE PASCAL
 1 FILE PHIC
 6 FILE PHIN
 18 FILE PROMT
 1906 FILE SCISEARCH
 675 FILE TOXCENTER
 140 FILE USPATFULL
 1 FILE USPAT2
 14 FILE WPIDS
 14 FILE WPINDEX
 4 FILE IPA
 24 FILE NLDB

L1 QUE REDUCTAS? AND METHYLENETETRA?

FILE 'SCISEARCH, BIOSIS, EMBASE, CAPLUS, MEDLINE, PASCAL, TOXCENTER,
 ESBIODBASE, BIOTECHNO, GENBANK, DGENE, CANCERLIT, USPATFULL, CABA,
 LIFESCI' ENTERED AT 17:50:25 ON 28 FEB 2003

L2 0 S REDUCTAS? SAME METHYLENETETRA?
 L3 10663 S REDUCTAS? AND METHYLENETETRA?
 L4 10320 S REDUCTAS? AND METHYLENETETRAHYDROFOLAT?
 L5 12478 S REDUCTAS? AND FOLATE?
 L6 0 S REDUCTAS? SAME MTHFR?
 L7 6544 S REDUCTAS? AND MTHFR?
 L8 138 S (PLANT? OR SOY? OR GLYCINE?) AND L7
 L9 78 DUP REM L8 (60 DUPLICATES REMOVED)

=> log h

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

110.00

114.06

SESSION WILL BE HELD FOR 60 MINUTES